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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,475	10/23/2001	Yang Cao	SYCS-060/P105	6764
959	7590	05/04/2005	EXAMINER	
LAHIVE & COCKFIELD, LLP. 28 STATE STREET BOSTON, MA 02109			DAVIS, CYNTHIA L	
			ART UNIT	PAPER NUMBER
			2665	

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/004,475

Applicant(s)

CAO, YANG

K

Examiner

Cynthia L Davis

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-4, 12, 14-22, and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Doverspike.

Regarding claim 1, defining a set of attributes for said links; calculating a backup path for each working path between a first node and a second node in said network, wherein said backup path is SRLG-disjoint from said working path; activating a backup path for a working path in response to a fault along said working path; adjusting said attributes for the links along said backup path; disseminating fault information to said nodes in said optical network is disclosed in Doverspike, paragraph 6, and paragraph 16 (disclosing use of SLRG-disjoint restoration paths).

Regarding claim 2, said attributes include attributes which will be disseminated globally to all said nodes in the network is disclosed in paragraph 6 ("the information used to select the restoration path is advantageously distributed among nodes in the network").

Regarding claim 3, another set of attributes which will be kept locally by one of the end points of said link is disclosed in paragraph 6 (the nodes in the service path are responsible for locally maintaining link information).

Regarding claim 4, said step of disseminating fault information is via OSPF is disclosed in paragraph 20.

Regarding claim 12, the set of attributes includes a resource reservation table wherein each entry further including a resource ID and paths reserving said resource is disclosed in paragraphs 25 and 27.

Regarding claim 14, the resource ID is wavelength ID is disclosed in paragraph 6 (reservation is made of wavelengths).

Regarding claim 15, the paths include both working path and backup path is disclosed in paragraphs 26 (service path) and 27 (restoration).

Regarding claim 16, identifying a first node and a second node in response to a request for establishing a path with a required bandwidth between said first and said second node; finding a first set of links by deleting from the interconnection graph links with a first of said attributes less than said required bandwidth; finding a first optimal path between said first and second node from said first set of links; finding a second set of links by further deleting from the interconnection graph the links sharing a second of said attributes with any one of the links along said first optimal path; assigning a value to said second set of links; finding a second optimal path between said first and said second node from said second set of links based on said assigned value; adjusting said first and second attributes for each link along said second optimal path is disclosed in Doverspike, paragraph 6, and paragraph 16 (disclosing use of SLRG-disjoint restoration paths).

Regarding claim 17, said first optimal path is the working path is disclosed in paragraph 26 (service path).

Regarding claim 18, said first optimal path is the backup path is disclosed in paragraph 27 (restoration path).

Regarding claim 19, said first attribute is residual bandwidth which is defined as total bandwidth of a link minus bandwidth allocated for working paths and backup paths is disclosed in paragraphs 23, 26 and 27 (disclosing storage of the overall network topology, and bandwidth allocated to working and backup paths).

Regarding claim 20, said second attribute is SRLG is disclosed in paragraph 16.

Regarding claim 21, detecting the fault in a working path; starting recovery process from tail end OXC of said path, which further includes: identifying reserved resource; passing fault information to the egress port of said OXC; passing said fault information to upstream node; configuring said OXC is disclosed in paragraphs 6, 14 (an OXC that terminates a path is the master node for that path; link data is stored in the OXCs), and 18 ("pre-computed restoration paths may be stored at the endpoint nodes of the connection and utilized, upon a network failure, to reroute the service connection").

Regarding claim 22, said step of detecting the fault is via SONET/SDH signal failure is disclosed in paragraph 13.

Regarding claim 24, said fault information includes a path ID is disclosed in paragraphs 35 and 38 (service and restoration path information are passed among the nodes).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 5-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doverspike.

Regarding claim 5, said set of attributes further includes a first subset of attributes which will be disseminated in low frequency is not specifically disclosed in Doverspike. However, transmitting information via various wavelengths (which is directly related to frequency) is disclosed in paragraph 6. It would have been obvious to send some information regarding the network via low frequencies. The motivation would be to use whatever wavelengths are available, some of which would be low frequency.

Regarding claim 6, said set of attributes further includes a first subset of attributes which will be disseminated in high frequency is not specifically disclosed in Doverspike. However, transmitting information via various wavelengths (which is directly related to frequency) is disclosed in paragraph 6. It would have been obvious to send some information regarding the network via high frequencies. The motivation would be to use whatever wavelengths are available, some of which would be high frequency.

Regarding claim 7, the subset of attributes includes total bandwidth is disclosed in paragraphs 23-26 (disclosing storage of information related to bandwidth in the network) and the end of paragraph 18.

Regarding claim 8, the subset of attributes includes SRLG- Shared Risk Link Group which is defined as a set of links sharing a common physical resource is disclosed in paragraphs 16 and 22.

Regarding claim 9, the subset of attributes includes bandwidth allocated to the working path is disclosed in paragraph 26.

Regarding claim 10, the subset of attributes includes bandwidth reserved to the backup path is disclosed in paragraph 27.

Regarding claim 11, the subset of attributes includes weighted SRLG is disclosed in paragraph 33 and figure 4, element 405, and paragraph 27.

3. Claims 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doverspike in view of Zouganeli. The resource ID is time slot ID is missing from Doverspike. However, Zouganeli discloses in column 5, lines 10-11, allocating a time-slot to each path in an optical network. It would have been obvious to one skilled in the art at the time of the invention to identify a resource by its time slot ID. The motivation would be to use a TDM system in the optical network.

4. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doverspike in view of Shah. Said fault information is propagated via SONET/SDH overhead bytes is missing from Doverspike. However, Shah discloses in claim 10, column 8, line 66-column 9, line 5, a method of transmitting fault information via SONET

overhead bytes. It would have been obvious to one skilled in the art at the time of the invention to propagate the information via overhead bytes. The motivation would be to use bandwidth that is not being used for anything else to transmit the information.

5. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doverspike in view of Graves. Said step of passing fault information to the egress port is via an inter-card communication mechanism is missing from Doverspike. However, Graves discloses in column 19, line 7, an optical switch with an inter-card bus. It would have been obvious to one skilled in the art to have the OXCs communication via an inter-card communication system. The motivation would be to use high-speed communication means between the switches.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia L Davis whose telephone number is (571) 272-3117. The examiner can normally be reached on 8:30 to 6, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CLD  
4/11/2005

CCD  
4/11/05

  
HUY D. VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600